

UNCLASSIFIED

AD NUMBER

ADB022521

LIMITATION CHANGES

TO:

Approved for public release; distribution is unlimited.

FROM:

Distribution authorized to U.S. Gov't. agencies only; Test and Evaluation; 13 JAN 1977. Other requests shall be referred to Electronic Systems Division, Attn: AFSC, Hanscom AFB, MA 01731.

AUTHORITY

USAFGL ltr, 7 Sep 1982

THIS PAGE IS UNCLASSIFIED

AD B 022521

AUTHORITY:

USAFGL

177 7 Sep 82





**E-SYSTEMS**  
Montek Division



Report No. 131500-603  
14 January 1977

ADB022521

INTERIM TEST REPORT  
ON THE SHOCK-DROP TEST  
OF THE  
AN/TRN-41 TACAN NAVIGATIONAL SET



Distribution limited to U. S. Government agencies only;  
Reason: Test and Evaluation. 13 January 1977. Other  
requests for this document must be referred to Department  
of the Air Force, Headquarters Electronic Systems Division  
(AFSC), Hanscom Air Force Base, Massachusetts 01731,  
Attention: PPG.

Prepared for:  
Department of the Air Force  
Headquarters Electronic Systems Division (AFSC)  
Hanscom Air Force Base  
Massachusetts 01731

Prepared by:  
✓ E-Systems, Inc., Montek Division  
2268 South 3270 West  
Salt Lake City, Utah 84119

✓ Contract No. F19628-75-C-0200  
CDRL Item A00Y

AD NO. \_\_\_\_\_  
DDC FILE COPY

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER (18) ESD-TR-77-302	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Interim Test Report on the Shock-Drop Test of the AN/TRN-41 TACAN NAVIGATIONAL SET.		5. TYPE OF REPORT & PERIOD COVERED (9) Interim test rept.
7. AUTHOR(s)  None		6. PERFORMING ORG. REPORT NUMBER (14) 131500-643
9. PERFORMING ORGANIZATION NAME AND ADDRESS E-Systems, Inc., Montek Division 2268 South 3270 West Salt Lake City, Utah 84119		8. CONTRACT OR GRANT NUMBER(s) (15) F19628-75-C-0200
11. CONTROLLING OFFICE NAME AND ADDRESS Electronic Systems Division (AFSC) Hanscom AFB, MA 01731		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE (11) 14 January 1977
		13. NUMBER OF PAGES (12) 32p.
		15. SECURITY CLASS. (of this report)  Unclassified
16. DISTRIBUTION STATEMENT (of this Report)  See Below		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A
17. DISTRIBUTION STATEMENT (if the abstract entered in Block 20, if different from Report) Distribution limited to U.S. Government agencies only; Reason: Test and Evaluation. 13 January 1977. Other requests for this document must be referred to Department of the Air Force, Hq ESD (AFSC), Hanscom AFB, Ma 01731, Attention: DRI		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)  AN/TRN-41 TACAN Navigational Set		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This test report is an interim report describing the failure and the proposed corrective action resulting from the Shock-Drop test on the AN/TRN-41 TACAN Navigational Set.		

**INTERIM TEST REPORT  
ON THE SHOCK-DROP TEST OF THE  
AN/TRN-41 TACAN NAVIGATIONAL SET**

This test report is an interim report describing the failure and the proposed corrective action resulting from the Shock-Drop test on the AN/TRN-41 TACAN Navigational Set. After the corrective action has been taken, these tests will be repeated.

1. **Test Identification.** Transit drop test of 48 inches, as defined in Appendix V-A (shock test procedure) of the Equipment Test Plan for Navigational Set, TACAN, AN/TRN-41.
2. **Functional Purpose of Test.** AN/TRN-41 system qualification.
3. **Test Objectives.** To demonstrate that the system will meet the requirements of Specification No. 404L-701-5017A, Part I, paragraph 3.2.5.2.1 (20 August 1976).
4. **Description of Test Article.** The AN/TRN-41 system is comprised of three manportable packages for this test, as follows:

Receiver-Transmitter, Radio, RT-1202/T -- 34.5 pounds

Manportable Configuration of Antenna, AS-3132/T -- 39.5 pounds (consists of antenna RF cable and manportable packing).

Manportable Configuration of Ancillary Group -- 37.5 pounds, consisting of the following:

Antenna Support Assembly, AB-1237/T

BB-451 Battery and Adapter

Interconnecting cables and ground stake

Manportable packing

Each of the above three packages were dropped 48 inches as defined in the shock test procedure.

5. **Summary of Test Results.**

a. **Pre-shock Operational Test.** The system passed successfully the pre-shock operational tests as defined in Appendix VII of the Equipment Test Plan for Navigational Set, TACAN, AN/TRN-41. The data sheets from these tests are included as part of this report; however, the post-shock test was not accomplished because of the damage incurred to the equipment during the test.

b. **Drop Test - Receiver-Transmitter.** This unit incurred major damage as the result of the drop test. An itemized list of damages noted by Quality Assurance is included as part of the data sheets. A study of the damaged RT indicates that there are three areas in which corrective action will be required in order for this unit to pass this test. These are as follows:

(1) Rubber bumper blocks. These blocks failed to protect the RT on the rear heat sink side. The blocks were not large enough, which allowed the heat sink to hit the floor, causing a severe shock to the RT.

(2) Card Rack. The card rack securing the seven circuit card assemblies deformed badly. All of the connectors used in securing the circuit cards broke; the card guides became twisted and deformed, and all circuit cards became loose.

(3) Synthesizer Chassis. The mounting flanges on this assembly broke off; therefore, this assembly became loose and caused major secondary damage.

c. Drop Test - Antenna (Manportable Configuration). This unit incurred major damage as a result of the drop test. An itemized list of the damage noted by Quality Assurance is included as part of the data sheets. The major problem areas are as follows:

(1) The upper radome cracked.

(2) The lower radome cracked.

(3) Damage was done to the 15 Hz and 135 Hz rotating drums, caused from making contact with the radome.

(4) Pedestal base broke.

After the test, the antenna was energized and the speed control and trigger generating circuitry were checked and found to be all right.

d. Drop Test - Ancillary Group (Manportable Configuration). An itemized list of the damage sustained by this item is included as part of the data sheets. The major problem areas are as follows:

(1) Tripod base casting was deformed slightly, making the bubble level inaccurate.

(2) The battery adapter handle was bent; however, it was still functional.

e. Bench Handling Test. Because of the damage sustained by the units in the drop test and the redesign that will be required as a result of this damage, the bench handling test was not performed at this time, but will be performed after the redesign has been completed.

6. Description of Test Setup. Each of the three manportable units (RT, Antenna and Ancillary Group) was dropped 48 inches onto a two-inch thick plywood backed by concrete floor. The drop was accomplished using a quick-release hook and drop tester mechanism. Each drop was in line through the unit's center of gravity, and on the surfaces described in the test procedures.

7. Test Setup Diagrams/Photographs. See Attachment 1.

8. Test Equipment. None.

9. Test Data. See Attachment 2.

10. Test Condition. Not Applicable.

ACCESSION for	
NTIS	White Section <input type="checkbox"/>
DDC	B.I.f Section <input checked="" type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
By	SPECIAL
B	

## 11. Discussion of Test Results.

a. Receiver-Transmitter (RT) Unit. The RT unit incurred major damage when it was dropped on the rear surface that mounts the heat exchanger. The rubber bumpers permitted the heat exchanger to strike the plywood floor with enough force to have an imprint of the exchanger on the floor. This severe shock deformed the rear of the case, broke the mounting of the synthesizer allowing it to float in the unit, and deformed the card cage so that the printed circuit cards became loose.

The rubber bumper blocks originally provided 1/8 inch clearance to the heat exchanger. This clearance has been increased by 1/2 inch and the area of these bumpers increased from 3.5 square inches to 9.0 square inches. The increase in depth and surface areas will prevent the heat sink from bottoming during drops.

The card rack has been redesigned to provide more rigidity so that the rack does not spring out of shape, allowing the cards to become loose and breaking the connectors. To increase the rigidity of the case, the aluminum composition and temper were changed, the rear connector plate was redesigned to one piece fastened to the side and top of the case, and the new front cover adds rigidity to the case by fastening to the sides at four places, in addition to supporting the printed circuit cards.

The synthesizer casting was redesigned to provide more rigidity and support at the top of the unit. The thickness of the mounting flange was increased to 1/16 inch and two bosses were added at the top of the casting to fasten to the braces. Braces were installed at the top of the unit from the front to the rear to provide support for the synthesizer and receiver.

To reduce the weight of the RT unit, lightening holes were added to the gussets between the front and rear panels and the chassis, to the chassis and to some of the brackets.

b. Antenna Unit. The antenna unit incurred damage with two types of drops. First, an angular drop on the upper radome such that the radome was deformed, damaging the 15 Hz and 135 Hz rotating drums. Second, the angular drop on the lower portion cracked the pedestal and lower radome.

The antenna weighed 33 pounds and the packing 6.5 pounds for a total of 39.5 pounds. The configuration of the antenna and pedestal placed the center of gravity away from the back pack. The shape of the pack and center of gravity were items that should be redesigned.

The antenna pedestal was redesigned by removing the compass and reducing its height. A nylon ring was added to the top of the radome to mount the compass during alignment. At all other times, the compass will be with the ancillary equipment. The design of the compass will change from the north seeking type to a 360° type - it will be the same compass that is used in the AN/TRN-26 system. The reduction in height of the pedestal allows the packing to be arranged so that the center of gravity is closer to the man's back.

The smaller pedestal is packed so that the drop shock is not concentrated on the flange of the pedestal, but distributed over the lower section of the antenna.

The upper radome was strengthened by adding two plies of fiberglass across the sides and top of the radome. This strengthening now prevents the radome from touching the 15 Hz and 135 Hz rotating drums.

The packing design effectively increases the density of the pack around the antenna. This was accomplished by sandwiching 1/2-inch polyethylene with polyurethane. Around the base, the polyethylene was 1-inch thick. In addition, a 1/2-inch polyethylene sheet was placed completely around the circumference of the antenna replacing the existing polyurethane. The interior dimensions remained the same and the same canvas pack was used.

An unofficial drop test on the antenna unit was made with the reduced pedestal, reinforced radome and stiffer packing material. The antenna unit passed this test. In an effort to reduce weight, an unreinforced radome was substituted in the antenna unit and dropped again. This substitution of radomes reduced the weight by one pound. The radome was fractured in two places, and the 135 Hz and 15 Hz drums were hit on the drop using the unreinforced radome.

Based on these tests, the final configuration of the antenna unit will include the one pound heavier reinforced radome. We are investigating other methods of packing, including air packing to reduce the weight.

c. Ancillary Group. The tripod and battery adapter handle were damaged during the drop test of the ancillary group.

The legs of the tripod were fastened to the tripod base during this test. Each of the legs pierced the foam packing and damaged the canvas. This shock was transmitted by the leg to the base casting, and in one case, deformed the base at the point where the legs mount. The new packaging design will pack the three legs separate from the base. The antenna pedestal base was divided in two parts; one mounted and packed with the antenna unit providing protection to the connectors, and the second part packed in the ancillary group. This part of the antenna pedestal will be nested in the tripod base.

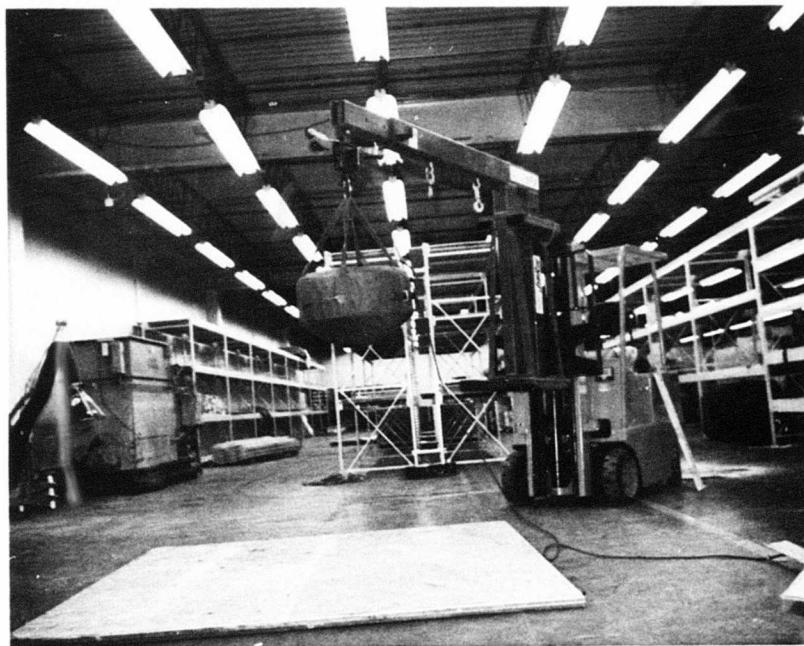
The tripod base casting will be modified so that the mounts for each leg will be shortened to the lowest height. This reduction will result in a slight weight savings.

The legs will be mounted to the antenna base using quick disconnect ball pins.

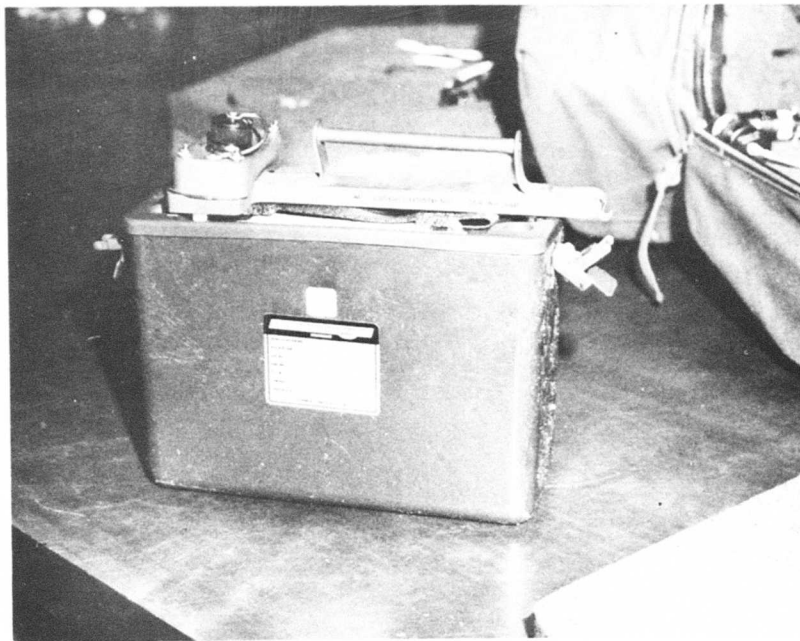
The density of the packing surrounding the battery and battery adapter will be increased. In addition, the battery adapter will nest in the packing.



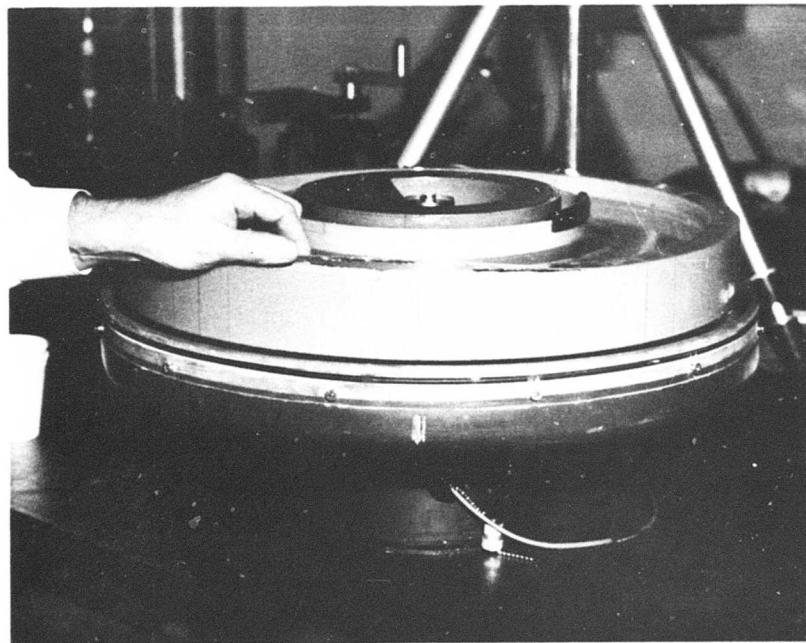
**ATTACHMENT 1**  
**DROP TEST PHOTOGRAPHS**



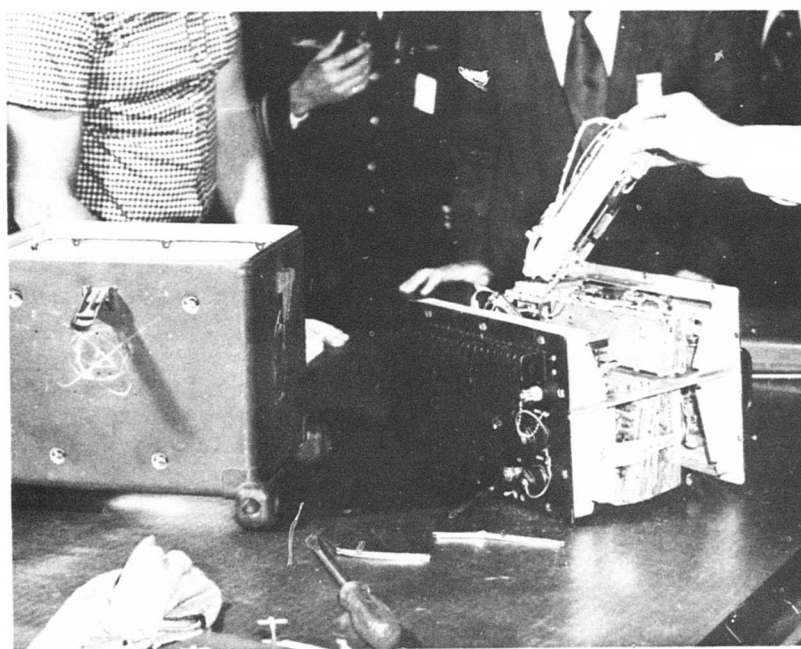
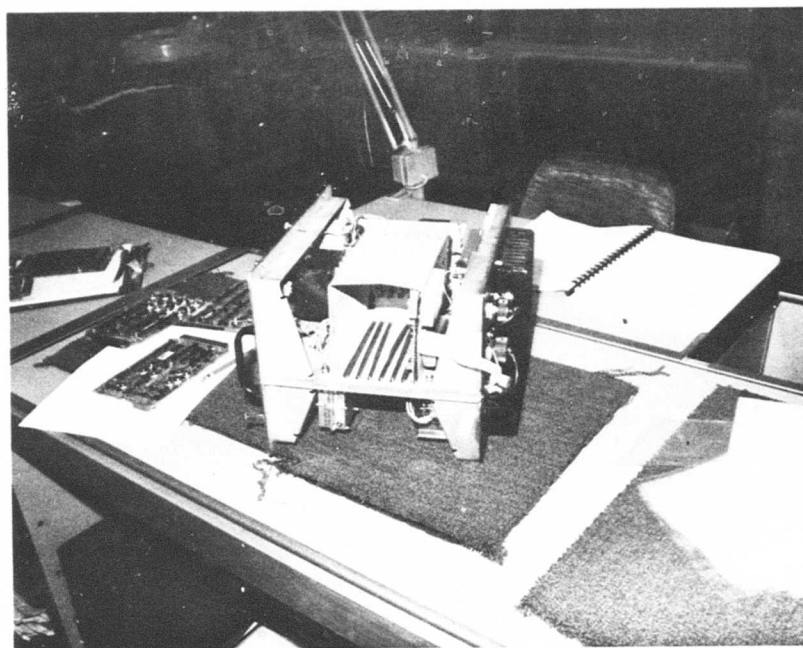
ANTENNA 48" DROP TEST



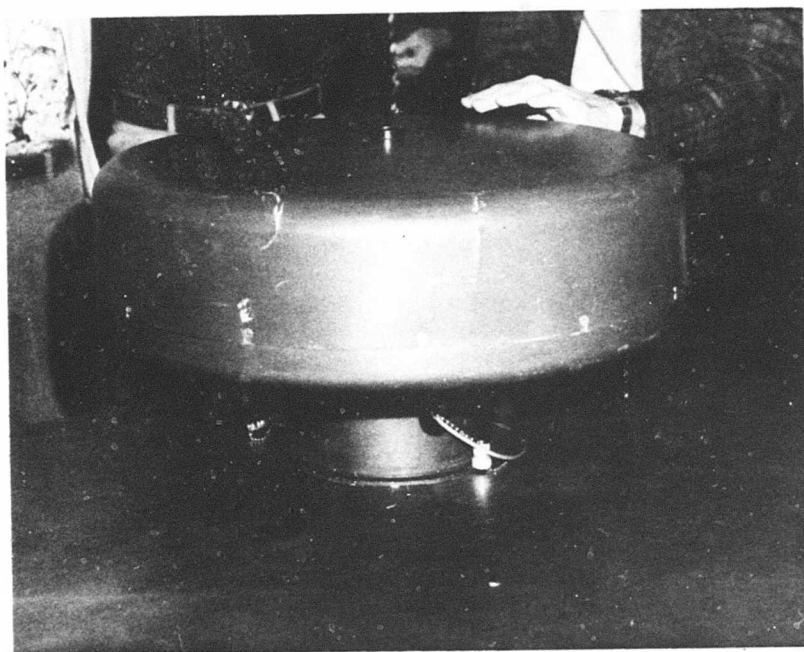
BATTERY AND ADAPTER AFTER 48" DROP TEST



INSIDE ANTENNA AFTER 48" DROP TEST



RT AFTER 48" DROP TEST



ANTENNA - AFTER 48" DROP TEST

**ATTACHMENT 2**

**TEST DATA**

June 30, 1976

DATA SHEET  
 OPERATIONAL TESTS  
 AN/TRN-41

Test PRE SHOCK TEST (4 FT)

Date

12/14/76

System

SERIAL 001

Time

9:00 AM

Tech

3D Dayh

Para. No.	Description	Pre Test	Test	Post Test	Requirements	Units
6.1	Calibrated RF insertion loss $P_L = 31.5$ dB Used in determining RF peak power.	N/A	N/A	N/A	N/A	N/A
6.2	System turn on normal operation	✓	BECAUSE NOT DONE DUE TO ADDITIONAL TESTING DURING SYSTEM FAILURE DROD TEST		Check if OK	N/A
6.3.1	Antenna radiated signal 15 Hz	✓			Check if OK	N/A
	135 Hz	✓			Check if OK	N/A
6.3.2	Antenna Speed	66.666			66.667 ± .133	ms
6.4.1.1	Correct identity code	✓			Check if OK	N/A
6.4.1.2	Identity period	✓			37.5 ± 3.75	Seconds
6.4.2	Peak power (1) Reading of peak power meter $P_m =$ (2) Convert to dBm - $10 \log$ $P_m \times 10^3 = P_m \text{ dBm}$ Total power output in dBm $P_{m \text{ dBm}} + P_L =$ *Insertion loss see 6.1 above.	45 49.8 51.2			N/A N/A 50 dBm	Watts dBm dB
6.4.3.3	Pulse count	7210			7200 ± 180	Counts
6.4.4.2	Pulse shape Width (50%) Rise time (10-90%) Fall time (90-10%)	3.52 us 2.07 us 2.50 us			3.5 ± 0.5 2 ± 0.25 2.5 ± 0.5	μs μs μs
6.4.4.4	Pulse spacing	12.07 us			12.0 ± 0.1	μs
6.4.5.2	Delay - 60 ± 10 μs 15 Hz trig to first burst pulse.	62 us ✓			Check if OK	

June 30, 1976

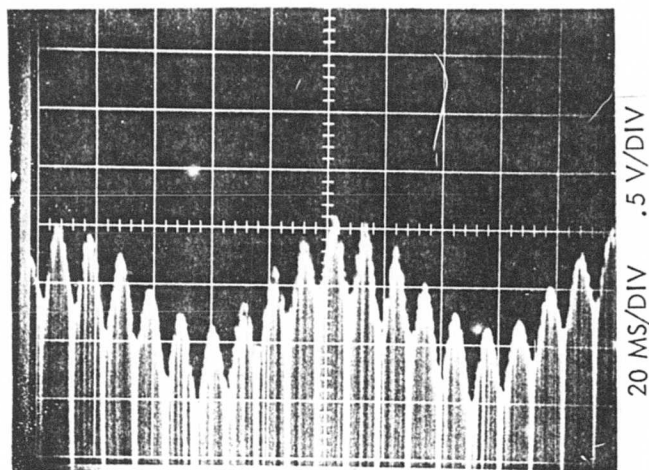
DATA SHEET  
OPERATIONAL TESTS  
AN/TRN-41 (Continued)

Para. No.	Description	Pre Test	Test	Post Test	Requirements	Units
6.4.5.3	Correct north Burst - 12 pulse pairs spaced $30 \pm 0.1 \mu s$	✓			Check if OK	
6.4.5.5	Delay $60 \pm 10 \mu s$ - 135 Hz trig to first burst pulse	✓			Check if OK	
6.4.5.6	Correct Aux burst - 6 pulse pairs spaced $24 \pm 0.1 \mu s$	✓			Check if OK	
6.4.6.5	RT replies to 3300 interrogations	✓			$\geq 2310$ (Counts/Second)	
6.4.6.7	Demand only mode - times to switch from ON to STBY within 70 seconds	✓			Check if OK	
6.4.6.8	STBY mode	✓			Check if OK	
6.4.6.9	Demand Only mode - time to switch from STBY to ON $\leq 15$ sec	✓			Check if OK	
6.4.6.10	ON AIR mode	✓			Check if OK	
6.4.7.1	DME ONLY mode	✓			Check if OK	
6.4.7.2	Switch from DME to TACAN	✓			Check if OK	
6.4.8.1	Antenna Alarm - Within four seconds	✓			Check if OK	
6.4.8.2	Alarm Reset	✓			Check if OK	
6.4.8.3	RT Alarm - Within five seconds	✓			Check if OK	
6.4.8.4	Alarm Reset	✓			Check if OK	

System Failed Shock Test so these tests will have to be re-run.

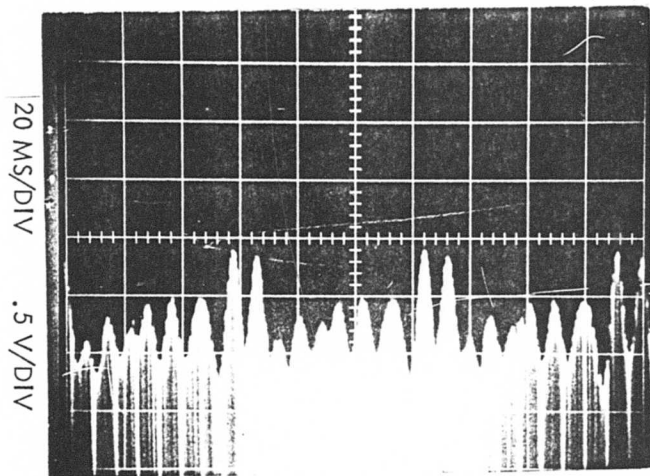


PRE SHOCK TEST - RADIATED DET SIGNAL 12/15/76



ANT S/N 001 WITH RT S/N 002

POST SHOCK TEST - RADIATED DET SIGNAL 12/16/76



ANT S/N 001

June 30, 1976

# AN/TRN-41 DATA SHEET FOR SHOCK

DATE 12/16/76

TIME \_\_\_\_\_

ITEM	SERIAL NO.	CHECK TO SHOW COMPLETION		INSPECTION AFTER TEST REMARKS
		DROP TEST	BENCH HANDLING	
RECEIVER-TRANSMITTER	002	✓	✓	See attached sheet -
ANTENNA IN MANPORTABLE PACKAGE	001	✓	✓	See attached sheet
ANTENNA SUPPORT ASSEMBLY CABLES AND BATTERY IN MANPORTABLE PACKAGE	001	✓	✓	See attached sheet -
DC POWER FILTER	001	—	—	—

The drop tests failed and all will have to be repeated.

TECHNICIAN Dave Davis

DATE 12/16/76

ENGINEER Blair D. Joseph

DATE 12/16/76

QA REPRESENTATIVE Norman P. Bailey

DATE 12-16-76

DCASD John W. Johnson

DATE 12-16-76

## **RT POST DROP TEST INSPECTION SUMMARY -**

**Note -** The RT was not opened and inspected after each drop. Instead the inspection was not made until after all the 4 foot drops had been completed; therefore, much of the damage in the RT was caused by drops being accomplished with loose parts inside (secondary failures). The primary failures are described in this report.

- 1- SYNTHESIZER CHASSIS -** The mounting flanges on this assembly broke off. Thus this assembly became loose inside the RT causing major secondary damage.
- 2- CARD RACK -** The card rack securing the 7 circuit card assemblies deformed badly. All of the connectors used in securing the circuit cards broke. The circuit cards came loose and as a result certain components on CCA were damaged. Card guides are twisted and deformed.
- 3- Rubber bumper blocks on the corners of the RT failed to protect the RT on the rear heat sink side -** blocks are not large enough and as a result the rear heat sink actually hit the floor which caused a severe shock to the RT. It is believed that this resulted in most of the damage in the unit.

12/16/76

## DISCREPANCY AND REWORK RECORD ACTIVITIES

R.M.R. NO. \_\_\_\_\_

27. S/N 002 AFTER 4' DROP TEST.

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	1	P/N 131120-100 S/N 003 AS MOUNTING HARDWARE NOT NEAREST 413 (3) TURNS LOOSE						
	2	AS W10 & W11 HAVE HAD THE TOPS OF THE I.C. BROKEN OFF						
	3	J1(41) TOP LIP OF CONNECTOR HAS BEEN DAMAGED SEVERAL PLACES						
	4	J1(41) TOP CENTER OF LIP BENT IN.						
	5	J1(41) PINS 11-12 & 24 ARE BENT						
	6	THE '+24V' TERMINAL IS BENT.						
	7	ARI E2 BENT						
	8	ARI TOP COVER IS DENTED BENT, SCRATCHED & COVER IS NOT FLUSH TO CHASSIS.						

# DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 2 OF 11

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	9	U2 TOP PLACE SEVERAL SCRATCHES THRU OUT						
	10	U2 TOP TAG LOOSE						
	11	U1 TOP TAG LOOSE						
	12	W1 TOP COVER APPEARS TO HAVE SHIFTED APPROX. 0.30"						
	13	W1 P2 (38) SOLDER CRACKED						
	14	W1 P1 (39) CABLE SMASHED ADJACENT TO END OF CONNECTOR						
	15	W2 P2 (36) SOLDER CRACKED						
	16	W4 P1 (32) SOLDER CRACKED						
	17	A5 CORNER BY W13 APPEARS TO HAVE BEEN HIT & DE-LAMINATED						
	18	CHASSIS BOTH HAVE THE MOUNTING FLANGES BROKEN OFF						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	19	THE CHASSIS BELOW CPI HAS (2) HALF MOON DENTS 1/8" X 5/16" & A CRACK 3/8" LOCATED 3/8" FROM DENTS						
	20	THE R.F. GASKET HAS LOST ITS SEALING EFFECT (5) PLACES.						
	21	U1 LOOSE TO PLATE						
	22	CPI LOOSE TO PLATE						
	23	THE THREADED STAND-OFF IN THE CENTER OF THE PLATED THREADED OUT OF THE A4 BOARD INSTEAD OF THE MOUNTING HARDWARE COMING OUT						
	24	L2 BINDING SCREW BROKEN OFF						
	25	W11 P2 (56) COAX CABLE SPLIT & BENT 1/4" FROM REAR OF CONNECTOR						
	26	W11 P1 (51) CONNECTOR PULLED APART.						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 4 OF 11

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	NRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	27	PIN DIODE ASSY S/N 001 J2 (56) (1) LOCKWASHER MISSING, P/N 131180-100						
	28	DIODE ASSY J1 (55) HAS (1) LOCKWASHER MISSING.						
	29	COVER HAS SEVERAL DEEP SCRATCHES LOCATED ABOVE FL1						
	30	THE BRACKET FOR DIODE ASSY, THE (2) MOUNTING SCREWS TO CHASSIS WERE (2) THREADS LOOSE & NOW THE INBOARD SCREW IS STRIPPED						
	31	THE (2) SCREWS FROM BRACKET TO DIODE ASSY EACH WAS LOOSE BY 1/2 TURN.						
	32	P/N 131140-100 S/N 003 RECEIVER ASSY J1 (10) & J2 (11) EACH HAVE (2) EXTRA FLAT WASHERS USED FOR MOUNTING HARDWARE						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MFB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	33	C1 & C3 TERMINALS ARE BENT 45°						
	34	WHEN THE RECEIVER WAS INSTALLED IN THE R.T. IT HAS (3) PAN HEAD SCREWS USED WITH NO FLAT WASHERS & OR LOCK- WASHERS.						
	35	WHEN RECEIVER WAS REMOVED TOP LEFT SCREW MISSING TOP RIGHT 4 TURNS LOOSE BOTTOM LEFT 7 TURNS LOOSE BOTTOM RIGHT 3/4 TURN LOOSE						
	36	PN 131160-100 3/N 005 POWER AMPLIFIER C16 & C17 NEGATIVE END LEAD BROKE OFF AT BODY OF CAPACITOR						
	37	NOTE C3 IS SAME TYPE CAPACITOR AS C16 & C17 ABOVE						
	38	THE 149132-001 BOARD IS CRACKED IN TWO PLACES.						



## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 6 OF 11

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MIB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	39	POWER CABLE J1 (16) & J2 (15) EACH HAVE (2) EXTRA FLAT WASHERS.						
	40	COVER HAS BEEN DAMAGED BELOW E10 & P.C. BOARD WAS STRUCK BY E10						
	41	AT4 LOOSE.						
	42	FL2 LOOSE						
	43	FL1 MOUNTING HARDWARE BY J1 (1) LOOSE (2) TURNS						
	44	FL1 BOTH NYLON CLAMPS BROKEN						
	45	RED WIRE TO P2 (17) PIN #8 HAS DAMAGED INSULATION 6" BEHIND CONNECTOR						
	46	U2 LOOSE						
	47	WIRE # 123 TO TBI-3 INSULATION IS DAMAGED TO THE INNER NO. 17 ...						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 7 OF 11

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	48	A10 P/N 131170-100 3/N 001 APPEARS TO HAVE HIT CHASSIS AT C1 NEGATIVE END SOLDER JOINT ON THE DTP SIDE OF BOARD						
	49	GRAY WIRE TO TBI-1 HAS DAMAGED INSULATION						
	50	BLACK WIRE TO TBI-7 DAMAGED INSULATION						
	51	AR3 HAS (1) MOUNTING SCREW MISSING						
	52	THE (2) MOUNTING SCREWS FOR AR3 BRACKET ARE LOOSE (1) BY J3 (27) 2 1/4 TURNS,						
	53	SS PIN #3 BROKEN WIRE STRANDS						
	54	YELLOW WIRE TO TBI-4 DAMAGED INSULATION						
	55	CARD CAGE BOTH SIDES BENT INWARD TOTAL LENGTH OF CAGE APPROX .150						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 8 OF 11

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	56	CARD CAGE TOP BENT UPWARD APPROX. 150						
	57	CARD CAGE REAR FOLDS TOP & BOTTOM BENT OUT APPROX. 20°.						
	58	TOP CARD GUIDES FOR A1, A3, A4 & A6 BOTH ENDS PULLED OUT.						
	59	TOP CARD CAGE <del>A2-A3</del> <del>A5</del> & <del>A6</del> FRONT PULLED OUT						
	60	CARD CAGE BOTTOM A2-A3 & A4 GUIDES PULLED OUT						
	61	ALL CARD GUIDES REMAINING ARE TWISTED & DEFORMED						
	62	XA1-2-5-6 & 7 CONNECTORS BROKEN AT TOP OF CARD CAGE						
	63	XA3 & XA4 CONNECTORS BROKEN AT BOTH ENDS.						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 9 OF 11

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	64	P.C. BOARD RETAINER STRAP BADLY DEFORMED						
	65	XA1 THRU XA7 SEVERAL BROKEN WIRES THRU OUT APPROX. 15						
	66	X44 PIN #33 PARTIALLY PULLED OUT OF CONNECTOR						
	67	W13 COAX CABLE BROKEN BEHIND EACH CONNECTOR						
	68	A1 S/N 006 TOP RIGHT CORNER DAMAGED & DE-LAMINATED						
	69	A1 CONNECTOR METAL STRIP BURPED THRU OUT						
	70	A1 GUIDE PIN BENT						
	71	A2 S/N 004 TOP RIGHT CORNER DAMAGED & DE-LAMINATED						
	72	A2 CONNECTOR METAL						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

R.M.R. NO. \_\_\_\_\_

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	73	A2 R56 BROKEN LEAD						
	74	A2 GUIDE PIN BROKEN						
	75	A2 PINS 49 & 50 ARE BURRED AT END						
	76	A3 S/N 002 TOP RIGHT CORNER DAMAGED & DE-LAMINATED						
	77	A3 EJECTOR NOT SEATED PROPERLY						
	78	A3 PIN #15 BROKEN						
	79	A3 PIN #40 BADLY BENT						
	80	A4 S/N 002 U4 & U12 HAVE CHIPPED CONFORMAL COATING						
	81	A4 PIN #16 BROKEN						
	82	A4 CONNECTOR METAL- STRIP BURRED THRU OUT						

**R.M.R. NO.**

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	83	A5 S/N 001 METAL STRIP BURPED THRU OUT						
	84	A7 S/N 001 U8 CONFORMAL COATING CHIPPED OFF						
	85	A7 R43 BROKEN AT LEAD SEAL						
	86	A1 U11 TOP BROKEN OFF						
	87	REAR OF CASE ALL AROUND BENT INWARD						

12/16/76

## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 1 OF 2

R.M.R. NO. \_\_\_\_\_

ANTENNA S/N 001

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MIR	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	1	THE 135 HZ ELEMENT ASSY S/N 001 HAS THE MATERIAL BROKEN AT TOP CROWN FROM THE 140° MARK TO 200° MARK ALSO FROM 260° MARK TO 350° MARK NOTE THE SEPERATION EXTENDS THRU THE MATERIAL						
	2	(3) SETS OF (3) WIRES EACH ARE BROKEN REF ABOVE.						
	3	(2) WIRES LOCATED AT 290° & 300° THERE IS A CRACK 1" X 3/8" FROM THE CROWN OF THE FOAM						
	4	AT 310° THERE IS A 1" CRACK FROM CROWN						
	5	UPPER RADOME (4) PLACES HAVE CRACKS APPROX 4" & IS DE-LAMINATED IN THE ADJACENT AREAS						
	6	LOWER RADOME APPROX 2/3 OF THE OUTER WALL HAS CRACKED & DE- LAMINATED AT EDGE.						

## DISCREPANCY AND REWORK RECORD ACTIVITIES

PAGE 2

R.M.R. NO. \_\_\_\_\_

ANTENNA S/N 001

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
	7	LOWER RADOME HAS (6) AREAS CRACKED MATERIAL, 1- A 1" CRACK THRU REFERENCE MARK 2- 4 NUTS COUNTER CLOCK WISE FROM REF MARK A 3/4" IS PRESENT AT BOTTOM OF RELIEF CUT THE 1" MORE C/CW IS ANOTHER 3/4" CRACK IN RELIEF CUT 3- 2 MORE NUTS C-C/W THERE IS A 1 1/2" CRACK LOCATED 1/2" BELOW RELIEF CUT 4 THEN 1 1/2 NUTS AWAY STILL C/CW IS A 1 1/4 CRACK AT BOTTOM OF RELIEF CUT 5 & 3 NUTS FURTHER, STILL C-C/W IS A 1 1/4 CRACK ON THE RELIEF CUT						
	8	THE PEDESTAL BASE CRACKED COMPLETELY AROUND & LARGE PIECES FELL OFF BASE						



R.M.R. NO.

## TRIPOD

Seq - DO1

OPERATION REJECTED	NO.	DISCREPANCY RECORD/REWORK INSTRUCTIONS	MRB	SCRAP	RWK	OPERATOR	REJECT	ACCEPT
		DISCREPANCIES AFTER 4' DROP TEST						
		SUPPORT ASSEMBLY ANTENNA P/N 131200						
	1	TRIPOD BASE IS TWISTED IN AREA WHERE LEG ASSEMBLY BOLTS TO TRIPOD BASE, TWO PICS. AXIS OF LEG ASSEMBLIES HAS SHIFTED .250 BETWEEN M16 BOLTS.						
	2	WITH TRIPODS LEVELLED USING BUBBLE LEVEL IN TRIPOD BASE, MOUNTING SURFACE WHICH INTERFACES WITH THE PEDESTAL SHOWS A 5° INCLINATION.						
	3	THE MOUNTING SURFACE IN THE TRIPOD BASE HAS BEEN REPT SLIGHTLY, CAUSING THE PEDESTAL TO "ROCK" WHEN INSTALLED.						
	4	THE LEG ASSEMBLIES HAVE INDENTATIONS WHERE LEGS FOLDED OVER EACH OTHER						

DISCREPANCY AND REWORK  
Part of Data Sheet for Sheet Set  
12/16/76  
BATTERY

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

449 124

**R.M.R. NO.**

[illegible]

THIS REPORT HAS BEEN DELIMITED  
AND CLEARED FOR PUBLIC RELEASE  
UNDER DOD DIRECTIVE 5200.20 AND  
NO RESTRICTIONS ARE IMPOSED UPON  
ITS USE AND DISCLOSURE.

DISTRIBUTION STATEMENT A

APPROVED FOR PUBLIC RELEASE;  
DISTRIBUTION UNLIMITED.